EXHIBIT F

Excerpts of Lu Deposition

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IN THE UNITED STATES BANKRUPTCY COURT

FOR THE DISTRICT OF DELAWARE

- x

In re: Chapter 11
                              Case No. 22-11068
FTX TRADING LTD., et al.,   (JTD)

          Debtors.

- x

          Deposition of KEVIN LU, taken
pursuant to notice, was held at the law
offices of SULLIVAN & CROMWELL LLP, 125
Broad Street, New York, New York,
commencing March 1, 2024, 9:00 a.m., on
the above date, before Leslie Fagin, a
Court Reporter and Notary Public in the
State of New York.

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1   K. Lu
2   Q.   It says that you have used -- the
3   methodology that you used in this assignment
4   is generally identical to the methodology
5   used to generate the Coin Metrics' prices
6   with minor adjustments, is that right?
7   A.   That's right.
8   Q.   What were the minor adjustments
9   necessary to price FTX digital assets?
10   A.   In this case, I created a hierarchy
11   of exchanges where I first preferred to use
12   exchanges that are considered trusted by the
13   trusted exchange framework and if a given
14   asset is not traded on those exchanges, then
15   I would then consider exchanges that are not
16   trusted and if a given asset is not traded on
17   either of the trusted exchanges or not
18   trusted exchanges, then I would consider
19   using the FTX exchanges and that is the
20   primary way that this methodology differs
21   from the Coin Metrics' prices. The Coin
22   Metrics' prices does not have this hierarchy
23   of selection.
24   Q.   How is Coin Metrics different, what
25   does it use instead of that hierarchy?

1   K. Lu
2   A.   It will consider all the candidate
3   markets from all exchanges, but the
4   methodology and logic used to select the
5   constituent markets is identical between what
6   I used in the declaration and the Coin
7   Metrics' prices.
8   Q.   So Coin Metrics' prices starts with
9   all of the exchanges and the methodology that
10   is used here only started with the trusted
11   exchanges if they were available?
12   A.   That's right.
13   Q.   In the next paragraph, paragraph
14   29, about halfway down, the middle of the
15   paragraph on that same page it says, It is
16   widely recognized within the industry that
17   some exchanges engage in wash trading or
18   other deceptive means to inflate their
19   reported trading activity.
20   Do you see that?
21   A.   That's right, I see it.
22   Q.   What information did you have to
23   support your statement that that conduct is
24   wildly recognized within the industry?
25   A.   I reviewed the paper published by

1   K. Lu
2   Bitwise in 2019 where they revealed that
3   there was a great deal of wash trade that
4   occurs in the industry. I saw firsthand how
5   the industry responded to this finding.
6   I've reviewed the academic
7   literature of other researchers that have
8   studied this same topic and just by the fact
9   of working full-time in the industry for the
10   past five years and regularly interacting
11   with other folks that work within the
12   industry, it's my opinion that most
13   sophisticated practitioners understand that
14   this is occurring.
15   Q.   You say you saw how the industry
16   responded to the 2019 Bitwise article, is
17   that right?
18   A.   Yes.
19   Q.   And how did the industry respond?
20   A.   There was a large amount of media
21   attention. I believe data providers and
22   practitioners within the industry either
23   published research or made changes in
24   response to the finding.
25   Q.   What changes did practitioners make

1   K. Lu
2   in response to the findings?
3   A.   One example that comes to mind is
4   that Bitwise identified in their view, 10
5   exchanges that had, quote/unquote, real
6   trading volume and in response to that, I
7   believe that Nasari, which is a media company
8   and data company within the cryptocurrency
9   industry, they started publishing the
10   reported volume for just these 10 exchanges
11   on their website.
12   Q.   Any other changes in the industry
13   that you are aware of as a result of the 2019
14   article?
15   A.   I believe Coin Market Cap made some
16   changes because they were severely criticized
17   in the Bitwise report.
18   Q.   Are you aware of other exchanges
19   that took corrective action to address the
20   problems that were identified in the 2019
21   article?
22   A.   I don't know the specific actions
23   that exchanges took.
24   Q.   But you are aware that many of the
25   exchanges at least claim to have implemented

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 1              K. Lu
 2   corrective changes as a result of the
 3   findings of the 2019 article, is that right?
 4       A.   I don't know if they've made
 5   changes or not.
 6       Q.   Part of your analysis and part of
 7   the assignment is this calculation of a
 8   confidence interval, is that right?
 9       A.   Yes.
10       Q.   And that's supposed to reflect the
11   uncertainty in the determination of a price
12   of an asset, is that right?
13       A.   Right.
14       Q.   Do you know what the definition of
15   confidence interval is for purposes of
16   statistics?
17       A.   Yes.
18       Q.   What is that?
19       A.   Typically, a confidence interval is
20   reported with a certain magnitude such as for
21   a certain level such as the confidence
22   interval at the 95 percent level and that
23   means that for a given statistic, the value
24   of that statistic would fall within that
25   range of 95 percent of the samples drawn from
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 1              K. Lu
 2   a hypothetical population.
 3       Q.   So your understanding is that in
 4   statistics, it is typical for a confidence
 5   interval to be pegged to a certain percentage
 6   of value like the 95 percentile?
 7       A.   Yes, it can be reported at any
 8   arbitrary level, but typically, 95 percentile
 9   is used.
10       Q.   What source do you rely on for your
11   determination that typically, the 95
12   percentile is used?
13       A.   It's based on my studies of
14   statistics at -- during my undergrad studies,
15   it's based on other reports that I've
16   encountered during my professional
17   experience.  I have found that 95th
18   percentile seems to be an industry standard,
19   if you will, that people tend to use.
20       Q.   What courses at Berkeley did you
21   take in statistics?
22       A.   I took statistics courses, I can't
23   recall the exact names, but they were a
24   requirement for my economics degree.
25       Q.   What's the basis for your opinion
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 1              K. Lu
 2   that using the 95th percentile for purposes
 3   of calculating a confidence interval is
 4   industry standard?
 5       A.   From reviewing other reports and
 6   papers on a variety of topics.
 7       Q.   And to be clear, when you say
 8   industry standard, what industry are you
 9   referring to?
10       A.   It goes beyond the cryptocurrency
11   industry.  This seems to be a standard that's
12   applied to a variety of contexts.
13       Q.   Would you agree that the term
14   confidence interval is intended to express
15   the level of uncertainty when inferring from
16   a sample to a larger population?
17       A.   I think that's one possible
18   interpretation, but there are other
19   interpretations that are equally valid.
20       Q.   Is that an accurate interpretation
21   for how you are using the term confidence
22   interval in your declaration?
23       A.   My interpretation of my assignment
24   was to produce a number that reflected the
25   uncertainty of my determination of the price
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 1              K. Lu
 2   and I chose the specific methodology I used
 3   to calculate this number to fulfill my
 4   assignment.
 5       Q.   Would you agree though that your
 6   pricing methodology including by excluding
 7   certain exchanges is taking a sample and then
 8   extrapolating that to determine the value for
 9   the population more broadly?
10          MR. GLUECKSTEIN:  Objection to
11       form.
12       A.   No, I do not consider that a sample
13   because usually when you refer to a sample,
14   you are usually referring to a random sample
15   where you are sampling without any bias.
16          My methodology involved selecting
17   the highest quality constituent market.
18   These are markets that are unlikely to engage
19   in wash trading, have large volume, are
20   unlikely to have outliers so I would not
21   consider this a sample of the population.
22       Q.   If you look at your rebuttal report
23   which is Exhibit 2, in paragraph 34, you
24   discuss three examples where you say that a
25   confidence interval calculated using the
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 1            K. Lu
 2   standard method in statistics would lead to
 3   unintuitive results.
 4        Do you see that?
 5     A.  Yes.
 6     Q.  Are the three examples that you
 7   provide, were those taken from any
 8   statistical textbooks or other academic
 9   authority?
10     A.  No.
11     Q.  Did you derive those three examples
12   from any of the statistics courses you took
13   at Berkeley or any other courses you have
14   taken on statistics?
15     A.  No.
16     Q.  Is the 95th percentile the same as
17   the 95th percent interval in statistics?
18     A.  I don't know.  I'm not sure if I
19   understand your question.
20     Q.  Are you generally familiar with
21   Professor Howell's work and analysis in this
22   case?
23     A.  I wouldn't say I'm generally
24   familiar.  I read a portion of her expert
25   report.  The portion that was relevant to the
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 1            K. Lu
 2   sections of Mr. Konstantinidis' report that
 3   criticized both my initial declaration and
 4   Professor Howell's report.
 5        MR. TOROSIAN:  Can we maybe take
 6     five minutes.
 7        MR. APPLEBAUM:  We will take a
 8     five-minute break.
 9        (Recess.)
10     Q.  Mr. Lu, one of the questions I
11   asked you a moment ago was about comparing
12   the 95th percentile to the 95 percent
13   interval.
14        If I reask that and ask is the 95th
15   percentile the same as the 95 percent
16   confidence interval, is that the same thing?
17        MR. GLUECKSTEIN:  Objection to
18     form.
19     A.  I'm not sure.  The 95th percentile
20   is just an abstract term.  I don't know if
21   they're the same thing.
22     Q.  How does the term -- how does the
23   95 percent confidence interval compare to a
24   margin of error?
25     A.  Typically, in my experience, the
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 1            K. Lu
 2   margin of error is just an alternative term
 3   for the confidence interval and typically,
 4   the margin of error will be reported at,
 5   again, arbitrary level like 95 -- like at the
 6   95th percentile.
 7     Q.  I just asked you a little bit about
 8   your familiarity with Professor Howell's
 9   analysis.
10        You are aware that she used your
11   analysis and the numbers you reported as part
12   of her analysis, is that right?
13     A.  I believe she used the prices that
14   I calculated, yes.
15     Q.  Do you believe that -- do you
16   understand that her work was affected in any
17   way by the specific confidence interval for
18   any particular digital asset?
19        MR. GLUECKSTEIN:  Objection to
20     form.
21     A.  I'm not familiar with the specific
22   analyses that Professor Howell did, but my
23   understanding was that the confidence
24   interval was not an input that she used.
25     Q.  What's your understanding as to the
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 1            K. Lu
 2   purpose of your calculating the confidence
 3   interval?
 4     A.  I really don't know, except that it
 5   was specifically asked for as part of the
 6   scope of my work.
 7     Q.  So one of the things that you say
 8   in your declaration is that the purpose is to
 9   estimate a range within which you think the
10   true price will fall, is that right?
11     A.  Yes.
12     Q.  So does that mean that there is a
13   true price, but that you are not able to
14   calculate that with precision?
15     A.  I think there is a true price, that
16   would be the price that is the output of
17   applying my methodology to the data.
18     Q.  Are you done?
19     A.  Yes.
20     Q.  So if applying the methodology to
21   the data creates the true price, why is the
22   confidence interval not zero for every
23   digital asset?
24     A.  The confidence interval just
25   reflects the uncertainty that I may have in
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 1           K. Lu
 2   created in October 2023, is that right?
 3      A.   That's right.
 4      Q.   And there is a reference to version
 5   2.0 that was released in March of 2023, is
 6   that right?
 7      A.   Yes.
 8      Q.   Was March '23's version, version
 9   2.0, was that the original version or was
10   there a version 1.0 or some other prior
11   version?
12      A.   There was a version 1.0 that was
13   published earlier, I can't recall the exact
14   year.
15      Q.   How was version 1.0 different than
16   version 2.0 or version 2.1?
17      MR. GLUECKSTEIN:  Objection to
18   form.
19      A.   I can't remember the specifics
20   because version 1.0 was published I think in
21   2020 or something, a substantial amount of
22   time ago, but it didn't contain as many of
23   these statistical tests to detect fake volume
24   and I believe that it didn't have tests for
25   assessing whether or not an exchange has
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 1           K. Lu
 2   proof of reserves and I believe that there
 3   were substantial changes in how we determined
 4   the regulatory score.
 5      Q.   I know you don't remember the exact
 6   date that version 1.0 was released, but you
 7   believe it was prior to the petition date of
 8   FTX's bankruptcy which was November 11, 2022?
 9      A.   Yes.
10      Q.   Were there any other intervening
11   versions of the trusted exchange framework in
12   between version 1.0 and version 2.0?
13      A.   No, there were not.
14      Q.   So version 1.0 was the version that
15   was in existence on the FTX bankruptcy
16   petition date, is that right?
17      A.   That's correct.
18      Q.   Why did Coin Metrics not use
19   version 1.0 to analyze and beat the prices of
20   these digital assets if that was the version
21   that was in existence on the petition date?
22      A.   There have been substantial
23   improvements in the methodology between
24   version 1.0 and version 2.0.  I felt that
25   using the most recent version would produce
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 1           K. Lu
 2   the highest quality results.  It represents
 3   our latest and most advanced thinking on this
 4   topic and the sample period of data that we
 5   used in version 2.1 encompassed the petition
 6   time.
 7      Q.   The data that's used or input into
 8   the trusted exchange framework is collected
 9   and reviewed quarterly, is that right?
10      A.   Yes, we tried to adhere to a
11   quarterly cadence.
12      Q.   So the version of the framework
13   that you used in December of 2023 when you
14   prepared your declaration would have been
15   using statistics from the exchanges as of the
16   end of Q3 of 2023, is that right?
17      A.   That's right.
18      Q.   Why do you believe that that's an
19   appropriate measure to determine whether the
20   exchanges were trustworthy in November of
21   2022?
22      A.   As I said before, the sample data
23   we used was from I believe Q3 2022 to Q3 2023
24   so it included the petition time.
25      It's also my opinion that the
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 1           K. Lu
 2   trustworthiness of an exchange, it changes
 3   slowly, there is no very abrupt changes.  I
 4   felt that the fact that the data sample
 5   encompassed the petition time and the fact
 6   that the trusted exchange framework
 7   represents our best thinking on this topic
 8   made it the appropriate version to use.
 9      Q.   On page 4 of the framework which
10   has the heading, Overall Rankings.
11      Do you see that?
12      A.   Yes.
13      Q.   This is from version 2.1 which was
14   released in October of 2023, is that right?
15      A.   Yes.
16      Q.   So this page shows the grades that
17   each of these exchanges received in these
18   five different categories, is that right?
19      A.   Yes.
20      Q.   And those are data quality, spot
21   transparency, resilience and security,
22   regulatory compliance, API quality and then
23   there is the overall grade?
24      A.   Yes, that's right.
25      Q.   Who decided these would be the five
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1            K. Lu
2    outstanding shares that equates to?
3        A.  It's a very, very small amount.
4        Q.  Do you know if anyone else at Coin
5    Metrics invests in Coin Base?
6        A.  I don't know if others at Coin
7    Metrics invest in Coin Base.
8        Q.  Are you required to report your
9    Coin Base share holdings to Coin Metrics?
10       A.  No, that is not part of the
11   conflict of interest policy that we have.
12       Q.  Do you believe that owning those
13   shares of Coin Base violates the conflict of
14   interest policy at Coin Metrics?
15       A.  No, I don't believe so.
16       Q.  Why not?
17       A.  Because the situation is not
18   covered under the policy.
19       Q.  What level of influence are you
20   able to exert with respect to whether Coin
21   Base is included or not as a trusted exchange
22   on the trusted exchange framework?
23       A.  I am not involved in the day to day
24   maintenance of the trusted exchange
25   framework, other than Coin Metrics will apply
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1            K. Lu
2    the statistical tests, but for the most part,
3    these tests are entirely rules based and it's
4    not able to be influenced by any one person.
5        Q.  Did you receive any reporting,
6    shareholder reports, offer memorandum,
7    anything like that in your capacity as a
8    shareholder of Coin Base?
9        A.  I guess I would be given the
10   standard reports that any other shareholder
11   would receive.
12       Q.  Do you rely on any of that
13   reporting in determining whether Coin Base is
14   a trusted exchange within the framework?
15       A.  No.
16       Q.  So you are familiar with the
17   exchange LBank, is that right?
18       A.  Yes.
19       Q.  LBank received a grade of C under
20   data quality in the current version of the
21   trusted framework, is that right?
22       A.  Yes.
23       Q.  Do you recall what grade LBank
24   received in version 1.0 of the trusted
25   exchange framework?
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1            K. Lu
2        A.  I don't recall.
3        Q.  Do you recall what grade MexC
4    received in the version 1.0?
5        A.  I also don't recall.
6        Q.  Was FTX included on the rankings in
7    the version 1.0?
8        A.  Yes, it was.
9        Q.  Do you know what rankings it
10   received?
11       A.  I do not recall the exact ranking,
12   but I recall it was considered a trusted
13   exchange.
14       Q.  You testified earlier that the
15   methodology that you've created here is one
16   way that you can calculate the price of a
17   digital asset, is that right?
18       A.  That's right.
19       Q.  What are some other ways that could
20   be used to calculate price?
21       A.  Each data provider or index
22   administrator has their own methodology.
23   Many of them are similar, but typically, they
24   will have their own methods for determining
25   which exchanges they want to use as
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1            K. Lu
2    constituents.
3        They may also use different
4    statistical techniques in calculating the
5    price.  Some methodologies may use the
6    weighted average or a time weighted average
7    price.  Those are other common techniques
8    that I've seen from reviewing other
9    methodologies.
10       Q.  Did you consider using any of those
11   other methodologies here?
12       A.  Yes.  Well, in the development of
13   the Coin Metrics' prices five years ago, we
14   did consider the usage of a weighted average,
15   but our backtesting results indicated that
16   using a weight average would be susceptible
17   to outliers, flash crashes and suspected
18   manipulation, whereas the use and of a
19   weighted median is more robust to these
20   situations.
21       Q.  Did you consider any other
22   methodologies for how to calculate the prices
23   for the digital assets in this case?
24       A.  No, I mainly just used our existing
25   methodology defined in the Coin Metrics'
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1   K. Lu
2   prices and applied it to this assignment.
3   Q.   When you say the traditional
4   methodology, that includes reliance on the
5   trusted exchange framework, is that right?
6   A.   Sorry, I don't know what you mean
7   by traditional methodology, how is it used?
8   Q.   So when you say you used the
9   similar methodology to what you used to
10 develop the Coin Metrics' prices, does the
11 methodology used to develop the Coin Metrics'
12 prices rely on the trusted exchange
13 framework?
14   A.   Yes, the Coin Metrics' prices also
15 relies on the trusted exchange framework.
16   Q.   Does the Coin Metrics' prices also
17 look only to the data quality category in the
18 rankings to determine what is a trusted
19 exchange or does it use the aggregate grade
20 in the far-right column in the framework?
21   A.   It uses the aggregate grade.
22   Q.   So you are using the trusted
23 exchange framework differently for this
24 analysis than you do with the Coin Metrics'
25 prices, is that right?

1   K. Lu
2   A.   That's right.
3   Q.   Why did you deviate from what is
4   normally done with the Coin Metrics' prices?
5   A.   I thought that using a hierarchy of
6   exchanges would be more appropriate where I
7   first rely on the trusted exchanges if a
8   given asset is traded on those exchanges and,
9   if not, then I will consider the low rated
10 exchanges and, if not, I will consider the
11 FTX exchanges.
12   I thought this would lead to a more
13 -- to a higher quality price, something
14 that's more defensible and utilizes the
15 highest quality constituent exchanges
16 possible for each asset.
17   Q.   How does excluding the categories
18 of transparency, resilience and security,
19 regulatory compliance and API quality result
20 in more likely to receive a higher quality
21 exchange?
22   A.   In this case, I wanted to place
23 greater emphasis on ensuring that the
24 transactions on the exchanges I used were
25 truly economic in nature and were the results

1   K. Lu
2   from willing buyers and willing sellers and
3   that is what the data quality subcategory
4   specifically examines, it examines for the
5   presence of wash trading or, conversely,
6   whether an exchange mostly engages in
7   economic trading.
8   Q.   So the other categories are not
9   relevant to determining price?
10   A.   They're less relevant, for example,
11 the criteria for transparency mainly
12 addresses whether an exchange has proof of
13 reserves which means whether or not they can
14 prove that all assets on the platform are
15 backed by actual holdings. That's less
16 relevant for calculating prices.
17   Q.   Coin Metrics, one of the products
18 it provides is the market data feed, is that
19 right?
20   A.   Yes.
21   Q.   Does that include exchanges such as
22 LBank?
23   A.   Yes, LBank is one of the exchanges
24 in the market data feed product.
25   Q.   Does the inclusion of LBank render

1   K. Lu
2   the market data feed less reliable?
3   A.   No, no, we cover a wide range of
4   exchanges of varying quality. LBank happens
5   to be the lowest quality exchange that we
6   cover according to the trusted exchange
7   framework, but I don't think it lowers the
8   quality of our overall data product.
9   Q.   Why does inclusion of a lower
10 quality, in your view, exchange, not produce
11 the quality of the market data feed product?
12   A.   We are just providing data reported
13 by the exchanges. The users can make their
14 own determination as to what data they want
15 to use from us and we publish the trusted
16 exchange framework as one method that they
17 can use to inform this decision.
18   Q.   Within the market data feed, is
19 there an indication that the data relating to
20 LBank may be less reliable because it's
21 coming from a less trusted exchange?
22   A.   There is no label or indicator in
23 the market data feed that speaks of the
24 quality of an exchange.
25   MR. APPLEBAUM: I believe that's

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K. Lu

1
2   all the questions -- we would request
3   production of a copy of the conflict of
4   interest policy that was referenced. I
5   will pass the witness.
6   EXAMINATION BY
7   MR. CHAPPLE:
8   Q.   My name is Ben Chapple. I'm an
9   attorney with Reed Smith.
10   The ground rules that Mr. Applebaum
11 went over with you at the outset of this
12 deposition apply. We won't talk over each
13 other.
14   If there is anything you don't
15 understand, please ask me to rephrase my
16 question.
17   A.   Sure.
18   Q.   If you answer my question, I will
19 assume you understand it.
20   Do you understand?
21   A.   Yes.
22   Q.   Obviously, we covered a lot of
23 ground today. I will do my best not to
24 rehash anything we've already discussed, but
25 there will be some overlap.

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K. Lu

1
2   Do you know what a market maker is?
3   A.   Yes.
4   Q.   What is a market maker?
5   A.   They typically will hold inventory
6   in a wide range of assets and facilitate the
7   buying and selling of that asset to
8   interested parties. They're in the business
9   of providing liquidity to buyers and sellers
10 that desire liquidity.
11   Q.   Do you believe there are any
12 competitive market makers with respect to
13 Maps and/or OXY tokens?
14   A.   I don't know if there are any
15 market makers that engage in trading of those
16 assets.
17   Q.   So you are just simply unaware
18 whether any market makers exist competitive
19 or otherwise?
20   A.   Right, there could be or couldn't
21 be, I don't know one way or the other.
22   Q.   In connection with your engagement,
23 you undertook no effort to determine the
24 extent to which there are market makers, is
25 that correct?

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K. Lu

1
2   A.   That's right.
3   Q.   You specifically advised Professor
4   Howell not to use volume data from ZB, Local
5   Bitcoin and LBank, isn't that correct?
6   A.   No, I did not specifically advise
7   her to do that.
8   Q.   Do you believe that Professor
9   Howell should have used volume data from ZB,
10 Local Bitcoin or LBank?
11   A.   Again, this is something that's
12 hard for me to offer an opinion about since
13 it's outside the scope of my work and I am
14 not familiar with the scope of her assignment
15 or the research regarding how to calculate a
16 liquidity discount so for those reasons, I
17 can't say whether or not it's appropriate or
18 not -- whether it's appropriate or not
19 appropriate.
20   Q.   So just to be clear, when I asked
21 earlier if you advised Professor Howell not
22 to use volume data from ZB, Local Bitcoin or
23 LBank, just to be clear, I mean directly or
24 indirectly including through counsel.
25   Do you understand?

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K. Lu

1
2   A.   Yes, I received questions from
3   Alvarez & Marsal. They presented me with
4   some data which showed outliers in volume,
5   many of which came from the exchanges ZB.com
6   and LBank.
7   In Coin Metrics' experience of
8   maintaining our data feeds with exchanges
9   over the past five years, we've determined
10 that there are several instances where the
11 reported data from ZB.com and LBank is
12 clearly erroneous. We've seen specific
13 examples where volume has spiked by a factor
14 of 8,000 which suggests to us that the data
15 is completely wrong and we observed this both
16 on LBank and ZB.com.
17   I expressed these thoughts to
18 Alvarez & Marsal, but I had no context as to
19 how they were going to use this information.
20   Q.   So it was not your intention to
21 advise Professor Howell directly or
22 indirectly whether or not she should use
23 volume data from ZB, Local Bitcoin and/or
24 LBank, is that correct?
25   A.   I didn't know the context of how

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1   K. Lu
2   they were going to use it. I simply received
3   some charts that showed some outliers and I
4   explained to them why they are seeing these
5   outliers.
6   Q. Cryptocurrency trades 24/7,
7   correct?
8   A. Yes.
9   Q. And cryptocurrency traders are all
10 over the world, right?
11   A. Yes.
12   Q. Do you agree that the highest
13 activity in cryptocurrency generally --
14 strike that.
15   Do you agree with the statement
16 that the highest activity in cryptocurrency
17 trading occurs between 9:00 a.m. and 4:00
18 p.m. local time?
19   A. By local time, do you mean a
20 specific time zone or...
21   Q. By local time, I mean the time zone
22 in which the trader resides, is located
23 during that period of time.
24   A. Yes, I agree with that statement.
25   Q. Just to be clear, you agree that

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1   K. Lu
2   the highest activity for cryptocurrency
3   occurs 9:00 a.m. to 4:00 p.m. where the
4   trader is located, correct?
5   A. It generally follows that pattern.
6   Q. Under what circumstances does it
7   not follow that general pattern?
8   A. I don't know. There could be
9   certain assets that just for some reason,
10 don't follow that pattern.
11   Q. Sitting here today, are you
12 familiar with any circumstances or specific
13 instances where it did not follow that
14 general pattern that you can point to?
15   A. I don't know of any specific
16 instances, I haven't looked at the data.
17   Q. So in light of recognizing that
18 generally, the highest activity in
19 cryptocurrency occurs between 9:00 a.m. and
20 4:00 p.m. local time, why did you choose a
21 60-minute interval?
22   A. My interpretation of my assignment
23 was to calculate the price exactly at the
24 petition time. That meant that I chose a
25 calculation window immediately prior to the

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1   K. Lu
2   petition time. If I chose a different
3   window, that would violate my understanding
4   of the assignment because it would involve
5   data, perhaps a significant time before the
6   petition time.
7   Q. A point of disagreement between you
8   and Mr. Konstantinidis relates to the
9   liability of trading volume data from Coin
10 Market Cap, correct?
11   A. Yes.
12   Q. Coin Market Cap is a data
13 aggregator, correct?
14   A. Yes.
15   Q. What does it mean to be a data
16 aggregator?
17   A. In this context, I mean that it's
18 taking data from a large number of exchanges
19 and applying statistical techniques to show
20 prices and combine trading volume.
21   Q. Coin Market Cap is a competitor of
22 Coin Metrics, correct?
23   A. Depends on what you mean by
24 competitor.
25   Internally, we don't really

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1   K. Lu
2   consider it to be a close competitor because
3   the profile of clients that we serve is very
4   different. My understanding is that Coin
5   Market Cap uses an advertising based and
6   exchange paid business model and primarily
7   serves a retail user base, whereas Coin
8   Metrics, we are exclusively a business to
9   business company that serves institutional
10 investors and other companies in the digital
11 assets industry.
12   Q. Do you agree with me that Coin
13 Market Cap as well as Coin Metrics' customer
14 base overlaps?
15   A. No, I said that we don't believe
16 there is much overlap because Coin Market Cap
17 primarily serves a retail user base, they
18 primarily serve the exchanges themselves,
19 that's how they get paid, whereas Coin
20 Metrics serves institutional investors and
21 companies in the industry.
22   Q. So it's your understanding that
23 Coin Market Cap does not serve institutional
24 investors or others in the industry?
25   A. They may serve, but I think

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 1            K. Lu
 2   primarily they do not serve institutional
 3   investors.
 4       Q.  You indicate that Coin Market Cap
 5   is not a reliable source of trading volume
 6   data because you believe, based on certain
 7   studies identified in your response, that
 8   Coin Market Cap's volume numbers include a
 9   large portion of fake volume and wash
10   trading, correct?
11       A.  Yes.
12       Q.  Have you performed any independent
13   analysis of the reliability of the trading
14   volume reported by Coin Market Cap?
15       A.  I personally haven't.
16       Q.  Has anyone done so at your
17   direction?
18       A.  No.
19       Q.  Why did you caveat your answer,
20   personally, you have not?
21       A.  I decided to caveat because I
22   reviewed research from other researchers
23   outside of Coin Metrics who have examined the
24   accuracy of Coin Market Cap's volumes and
25   their conclusion is that it's over reporting.
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 1            K. Lu
 2       Q.  You said that you reviewed other
 3   reviewer's findings, is that what you said?
 4       A.  Yes.
 5       Q.  Did you independently assess the
 6   other reviewer's finding or did you just take
 7   the reviewer's finding at face value?
 8       A.  As one example, I reviewed the 2019
 9   Bitwise paper which concluded that 95 percent
10   of the volume is fake and although we have
11   not performed the same exact analysis that
12   Bitwise did, we have used the techniques that
13   they introduced in the paper and applied it
14   to our own sample of data and have found
15   those techniques are effective in identifying
16   exchanges that may engage in wash trading.
17       Q.  So the Bitwise article that you
18   were just mentioning, I will refer to it as
19   the 2019 Bitwise article.
20           Do you understand?
21       A.  Yes.
22       Q.  Following the publication of the
23   2019 Bitwise article, Coin Market Cap made
24   some changes to how it calculates total sales
25   volume, correct?
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 1            K. Lu
 2       A.  Yes, trading volume.
 3       Q.  And, in fact, in footnote 8 of your
 4   response, you note that after the publication
 5   of the 2019 Bitwise article, Coin Market Cap
 6   began excluding a particular exchange from
 7   reported volume calculations if the exchange
 8   had zero fees, provides incentives to users
 9   to trade or if the price outliers are
10   detected, isn't that correct?
11           Footnote 8, paragraph 10 of your
12   report if you would like to refer to it.
13       A.  Yes, that's correct.
14       Q.  When were these changes
15   implemented?
16       A.  I don't know the exact date, but in
17   the subsequent months after the publication
18   of the 2019 Bitwise report.
19       Q.  So the changes would have been
20   implemented prior to the petition date?
21       A.  Yes.
22       Q.  Would an exchange that had zero
23   fees be more likely to have more fake volume
24   or wash trading than an exchange that
25   enforces trading fees?
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 1            K. Lu
 2       A.  Yes, I think an exchange that has
 3   zero trading fees invites wash trading.
 4       Q.  So removing exchanges without
 5   trading fees would reduce the percentage of
 6   fake volume or wash trading, correct?
 7       A.  It would, but there would be
 8   several other exchanges that engage in wash
 9   trade that that rule would not exclude.
10       Q.  Such as?
11       A.  As I explained in my footnote 8,
12   the steps that Coin Market Cap took represent
13   only the most cursory attempts at addressing
14   the fake volume problem.  They are removing
15   exchanges which are engaging the most blatant
16   and obvious forms of wash trading.  It's my
17   opinion that if an exchange wants to engage
18   in wash trading to deceive market
19   participants, they would want to do it in a
20   somewhat covert manner, they want to do it
21   secretly and not let others know that they
22   are doing so in order for their deception to
23   succeed.
24           It's my understanding that Coin
25   Market Cap is still taking no steps to
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1   K. Lu
2   address exchanges that may engage in covert
3   deception and it is still my opinion that
4   Coin Market Cap's volume includes substantial
5   amount of wash trading.
6   Q. Would an exchange that provides
7   incentives to users to trade be more likely
8   to have more fake volume or wash trade in an
9   exchange that does not offer such incentives?
10   A. Yes, it would -- an exchange that
11   engages in that process would have more wash
12   trade.
13   Q. So removing exchanges that provides
14   incentive to users to trade would reduce the
15   percentage of fake volume or wash trading,
16   correct?
17   A. Yes, but as I mentioned before,
18   that only addresses the most cursory attempt
19   at addressing the problem.
20   Q. Would an exchange that has price
21   outliers be more likely to have fake volume
22   or wash trading than an exchange that does
23   not offer such incentives?
24   A. I think that it's unrelated to wash
25   trading. I don't know why Coin Market Cap

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1   K. Lu
2   decides to exclude it. One reason could be
3   that sometimes a ticker symbol may be
4   mismatched between the exchange reported
5   symbol and Coin Market Cap symbol that could
6   lead to an outlier. In those cases, they
7   decide to remove it from the volume
8   calculation.
9   Q. Have you performed or has anyone at
10   your direction performed any analysis to
11   determine whether any changes implemented by
12   Coin Market Cap after the 2019 Bitwise
13   article improved the reliability of Coin
14   Market Cap's reported trading volume?
15   A. No, I have not and no one under my
16   direction has done so either.
17   Q. Are you aware of any studies that
18   analyze the reliability of Coin Market Cap's
19   volume data after the changes we just
20   discussed were implemented?
21   A. I don't know, but subsequent to the
22   publication of the 2019 Bitwise report, there
23   have been other independent researchers who
24   have studied the same problem using more
25   recent samples of data and they have come to

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1   K. Lu
2   the same conclusion.
3   Q. Can you identify any of those
4   researchers?
5   A. Yes. They are listed in my
6   response in footnote 7.
7   Q. Is Cong one of the researchers?
8   A. Yes.
9   Q. Is Le Pennec one of the
10   researchers?
11   A. Yes.
12   Q. Is it fair to say that footnote 7
13   includes all of the researchers of which you
14   are aware?
15   A. No. In fact, if you Google on
16   Google Scholar the terms crypto wash trading,
17   you will find hundreds of results. It's been
18   a well-studied topic in the literature.
19   Q. Why did you choose to include the
20   specific examples that you did in footnote 7
21   as opposed to any of the other hundreds of
22   examples?
23   A. These are some of the most highly
24   cited papers. The ones that have achieved
25   the most prominence in the literature.

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1   K. Lu
2   Q. In your view, did the examples that
3   you included in footnote 7 best support your
4   opinion on this issue?
5   A. I don't know if they best support,
6   there could be other papers that support it
7   even better, but they're certainly consistent
8   with my opinion that there is a considerable
9   amount of wash trade that occurs.
10   Q. You note in your report that after
11   the publication of the 2019 Bitwise article,
12   Coin Market Cap has released additional
13   metrics to provide users with a greater level
14   of transparency regarding which exchanges are
15   likely to have noneconomic or fake volume,
16   correct?
17   A. Yes.
18   Q. When were these additional metrics
19   first introduced?
20   A. Again, I don't know the exact
21   timing, but to the best of my recollection,
22   it's in the months after the publication of
23   the Bitwise report.
24   Q. These metrics include a confidence
25   indicator and liquidity score, correct?

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